

Release notes for ENDF/B Development n-097_Bk_249
evaluation

ENDF
B-VII.**dev**

April 26, 2017

- **psyche** Warnings:

1. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 6.00000E+01. STRENGTH FUNCTION IS 3.30568E-04 / STRENGTH FUNCTION 3.30568E-04 / LIES OUTSIDE LIMITS 1.00000E-04 TO 3.00000E-04 (0): URR str. ftn.

```
FILE 2
SECTION 151
ENERGY = 6.00000E+01. STRENGTH FUNCTION IS 3.30568E-04
STRENGTH FUNCTION 3.30568E-04
LIES OUTSIDE LIMITS 1.00000E-04 TO 3.00000E-04
... [15 more lines]
```

2. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 6.00000E+01. STRENGTH FUNCTION IS 3.30578E-04 / STRENGTH FUNCTION 3.30578E-04 / LIES OUTSIDE LIMITS 1.00000E-04 TO 3.00000E-04 (0): URR str. ftn.

```
FILE 2
SECTION 151
ENERGY = 6.00000E+01. STRENGTH FUNCTION IS 3.30578E-04
STRENGTH FUNCTION 3.30578E-04
LIES OUTSIDE LIMITS 1.00000E-04 TO 3.00000E-04
... [15 more lines]
```

3. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 6.00000E+01. STRENGTH FUNCTION IS 3.30573E-04 / STRENGTH FUNCTION 3.30573E-04 / LIES OUTSIDE LIMITS 1.00000E-04 TO 3.00000E-04 (0): URR str. ftn.

```
FILE 2
SECTION 151
ENERGY = 6.00000E+01. STRENGTH FUNCTION IS 3.30573E-04
STRENGTH FUNCTION 3.30573E-04
LIES OUTSIDE LIMITS 1.00000E-04 TO 3.00000E-04
... [15 more lines]
```

4. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 6.00000E+01. STRENGTH FUNCTION IS 3.30574E-04 / STRENGTH FUNCTION 3.30574E-04 / LIES OUTSIDE LIMITS 1.00000E-04 TO 3.00000E-04 (0): URR str. ftn.

```
FILE 2
SECTION 151
ENERGY = 6.00000E+01. STRENGTH FUNCTION IS 3.30574E-04
STRENGTH FUNCTION 3.30574E-04
LIES OUTSIDE LIMITS 1.00000E-04 TO 3.00000E-04
... [15 more lines]
```

- **fudge-4.0** Warnings:

1. Missing a channel with a particular angular momenta combination
resonances / resolved / MultiLevel_BreitWigner (Error # 0): missingResonanceChannel

WARNING: Missing a channel with angular momenta combination L = 0, J = 2.0 and S = 2.0 for "capture"

2. Potential scattering hasn't converted, you need more L's!
resonances / resolved (Error # 1): potentialScatteringNotConverged

WARNING: Potential scattering hasn't converged by L=0 at E=60.0 eV, xs[0]/xs[0]=100.0% > 0.1%

3. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.40%

4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 1 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [nubar]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 2 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [nubar]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (3.973913e-09) is too small

6. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 3 (total): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

7. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 4 (n + Bk249): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

8. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 4 (n + Bk249): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

9. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 8 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

10. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 10 (n + (Bk249_e1 ->Bk249 + gamma)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.884852e-10) is too small

11. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 11 ($n + (Bk249_e2 \rightarrow Bk249 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (9.129565e-10) is too small

12. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 12 ($n + (Bk249_e3 \rightarrow Bk249 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (4.378956e-09) is too small

13. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 13 ($n + (Bk249_e4 \rightarrow Bk249 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (8.127079e-10) is too small

14. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 14 ($n + (Bk249_e5 \rightarrow Bk249 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (2.433283e-09) is too small

15. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 15 ($n + (Bk249_e6 \rightarrow Bk249 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (2.932610e-11) is too small

16. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 16 ($n + (Bk249_e7 \rightarrow Bk249 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.004018e-10) is too small

17. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 18 ($n + (Bk249_e9 \rightarrow Bk249 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (6.269130e-09) is too small

18. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 19 ($n + (Bk249_e10 \rightarrow Bk249 + \gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (1.181913e-09) is too small

19. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 20 (n + (Bk249_c ->Bk249 + gamma)): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

20. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 21 (Bk250 + gamma): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

21. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 22 (n + Bk249 [angular distribution]): / Form 'eval': (Error # 1): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

22. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 23 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

23. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 24 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

24. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 25 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

25. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 26 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

- fudge-4.0 Errors:

1. ENDF format insists that all outgoing fission neutrons, delayed or otherwise, have spectra. For delayed neutrons this is tough.

Reading ENDF file: ../n-097_Bk_249.endf (Error # 0): No delayed n dist

WARNING: More than one delayed fission neutron decay time but no MF = 5 data

2. Energy range of data set does not match cross section range
reaction label 11: n + (Bk249_c ->Bk249 + gamma) / Product: Bk249_c / Decay product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (120000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

3. Energy range of data set does not match cross section range
reaction label 11: n + (Bk249_c ->Bk249 + gamma) / Product: Bk249_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (120000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

WARNING: Domain doesn't match the cross section domain: (156461.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

WARNING: Domain doesn't match the cross section domain: (156461.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

... plus 14 more instances of this message

4. Energy range of data set does not match cross section range
reaction label 11: n + (Bk249_c ->Bk249 + gamma) / Product: Bk249_c / Decay product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (156461.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

5. Energy range of data set does not match cross section range
reaction label 11: n + (Bk249_c ->Bk249 + gamma) / Product: Bk249_c / Decay product: gamma_c / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (156461.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

6. Energy range of data set does not match cross section range
reaction label 11: n + (Bk249_c ->Bk249 + gamma) / Product: Bk249_c / Decay product: gamma_d / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

7. Energy range of data set does not match cross section range
reaction label 11: n + (Bk249_c ->Bk249 + gamma) / Product: Bk249_c / Decay product: gamma_e / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

8. Energy range of data set does not match cross section range
reaction label 11: n + (Bk249_c ->Bk249 + gamma) / Product: Bk249_c / Decay product: gamma_f / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (250000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

9. Energy range of data set does not match cross section range
reaction label 11: n + (Bk249_c ->Bk249 + gamma) / Product: Bk249_c / Decay product: gamma_g / Multiplicity: (Error # 0): Domain mismatch (a)

- WARNING: Domain doesn't match the cross section domain: (284297.0 -> 20000000.0) vs (110893.0 -> 20000000.0)
10. Energy range of data set does not match cross section range
reaction label 11: $n + (Bk249.c \rightarrow Bk249 + \gamma)$ / Product: $Bk249.c$ / Decay product: γ_{h} / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

 11. Energy range of data set does not match cross section range
reaction label 11: $n + (Bk249.c \rightarrow Bk249 + \gamma)$ / Product: $Bk249.c$ / Decay product: γ_{i} / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

 12. Energy range of data set does not match cross section range
reaction label 11: $n + (Bk249.c \rightarrow Bk249 + \gamma)$ / Product: $Bk249.c$ / Decay product: γ_{j} / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

 13. Energy range of data set does not match cross section range
reaction label 11: $n + (Bk249.c \rightarrow Bk249 + \gamma)$ / Product: $Bk249.c$ / Decay product: γ_{k} / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

 14. Energy range of data set does not match cross section range
reaction label 11: $n + (Bk249.c \rightarrow Bk249 + \gamma)$ / Product: $Bk249.c$ / Decay product: γ_{l} / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (200000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

 15. Energy range of data set does not match cross section range
reaction label 11: $n + (Bk249.c \rightarrow Bk249 + \gamma)$ / Product: $Bk249.c$ / Decay product: γ_{m} / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (250000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

 16. Energy range of data set does not match cross section range
reaction label 11: $n + (Bk249.c \rightarrow Bk249 + \gamma)$ / Product: $Bk249.c$ / Decay product: γ_{n} / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (284297.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

 17. Energy range of data set does not match cross section range
reaction label 11: $n + (Bk249.c \rightarrow Bk249 + \gamma)$ / Product: $Bk249.c$ / Decay product: γ_{o} / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

 18. Energy range of data set does not match cross section range
reaction label 11: $n + (Bk249.c \rightarrow Bk249 + \gamma)$ / Product: $Bk249.c$ / Decay product: γ_{p} / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

19. Energy range of data set does not match cross section range
reaction label 11: $n + (Bk249.c \rightarrow Bk249 + \gamma) / Product: Bk249.c / Decay product: \gamma_{..q} / Multiplicity: (Error \# 0): Domain mismatch (a)$

WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

20. Energy range of data set does not match cross section range
reaction label 11: $n + (Bk249.c \rightarrow Bk249 + \gamma) / Product: Bk249.c / Decay product: \gamma_{..r} / Multiplicity: (Error \# 0): Domain mismatch (a)$

WARNING: Domain doesn't match the cross section domain: (400000.0 -> 20000000.0) vs (110893.0 -> 20000000.0)

21. Calculated and tabulated Q values disagree.
reaction label 12: $n[multiplicity:'2'] + Bk248 + \gamma (Error \# 0): Q mismatch$

WARNING: Calculated and tabulated Q-values disagree: -6594928.93347168 eV vs -6.3017e6 eV!

22. Energy range of data set does not match cross section range
reaction label 12: $n[multiplicity:'2'] + Bk248 + \gamma / Product: \gamma_{..a} / Multiplicity: (Error \# 0): Domain mismatch (a)$

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

23. Energy range of data set does not match cross section range
reaction label 12: $n[multiplicity:'2'] + Bk248 + \gamma / Product: \gamma_{..a} / Distribution: / uncorrelated - angular - isotropic: (Error \# 0): Domain mismatch (a)$

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

24. Energy range of data set does not match cross section range
reaction label 12: $n[multiplicity:'2'] + Bk248 + \gamma / Product: \gamma_{..b} / Multiplicity: (Error \# 0): Domain mismatch (a)$

WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

25. Energy range of data set does not match cross section range
reaction label 12: $n[multiplicity:'2'] + Bk248 + \gamma / Product: \gamma_{..b} / Distribution: / uncorrelated - angular - isotropic: (Error \# 0): Domain mismatch (a)$

WARNING: Domain doesn't match the cross section domain: (6500000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

26. Energy range of data set does not match cross section range
reaction label 12: $n[multiplicity:'2'] + Bk248 + \gamma / Product: \gamma_{..c} / Multiplicity: (Error \# 0): Domain mismatch (a)$

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

27. Energy range of data set does not match cross section range
reaction label 12: $n[multiplicity:'2'] + Bk248 + \gamma / Product: \gamma_{..c} / Distribution: / uncorrelated - angular - isotropic: (Error \# 0): Domain mismatch (a)$

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

28. Energy range of data set does not match cross section range
reaction label 12: n[multiplicity:'2'] + Bk248 + gamma / Product: gamma_d / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

29. Energy range of data set does not match cross section range
reaction label 12: n[multiplicity:'2'] + Bk248 + gamma / Product: gamma_d / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

30. Energy range of data set does not match cross section range
reaction label 12: n[multiplicity:'2'] + Bk248 + gamma / Product: gamma_e / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

31. Energy range of data set does not match cross section range
reaction label 12: n[multiplicity:'2'] + Bk248 + gamma / Product: gamma_e / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

32. Energy range of data set does not match cross section range
reaction label 12: n[multiplicity:'2'] + Bk248 + gamma / Product: gamma_f / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

33. Energy range of data set does not match cross section range
reaction label 12: n[multiplicity:'2'] + Bk248 + gamma / Product: gamma_f / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

34. Energy range of data set does not match cross section range
reaction label 12: n[multiplicity:'2'] + Bk248 + gamma / Product: gamma_g / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

35. Energy range of data set does not match cross section range
reaction label 12: n[multiplicity:'2'] + Bk248 + gamma / Product: gamma_g / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

36. Energy range of data set does not match cross section range
reaction label 12: n[multiplicity:'2'] + Bk248 + gamma / Product: gamma_h / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

37. Energy range of data set does not match cross section range
reaction label 12: n[multiplicity:'2'] + Bk248 + gamma / Product: gamma_h / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

38. Energy range of data set does not match cross section range
reaction label 12: n[multiplicity:'2'] + Bk248 + gamma / Product: gamma_i / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

39. Energy range of data set does not match cross section range
reaction label 12: n[multiplicity:'2'] + Bk248 + gamma / Product: gamma_i / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7000000.0 -> 20000000.0) vs (6327210.0 -> 20000000.0)

40. Calculated and tabulated Q values disagree.
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -12077698.9258728 eV vs -1.17836e7 eV!

41. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

42. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

43. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

44. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

45. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_d / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

46. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_d / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

47. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_e / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

48. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_e / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

49. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_f / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

50. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_f / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

51. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_g / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

52. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_g / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

53. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_h / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

54. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_h / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

55. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_i / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

56. Energy range of data set does not match cross section range
reaction label 13: n[multiplicity:'3'] + Bk247 + gamma / Product: gamma_i / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (12500000.0 -> 20000000.0) vs (11831400.0 -> 20000000.0)

57. Calculated and tabulated Q values disagree.
reaction label 14: n[multiplicity:'4'] + Bk246 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -18626831.19387817 eV vs -1.83328e7 eV!

58. Calculated and tabulated Q values disagree.
reaction label 16: Bk250 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 4675507.682800293 eV vs 4969570. eV!

59. Multiplicity does not match sum of linked product multiplicities!
multiplicitySum label 13: n + (Bk249_c ->Bk249 + gamma) total gamma multiplicity (Error # 0): summedMultiplicityMismatch

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 0.28%

60. Multiplicity does not match sum of linked product multiplicities!
multiplicitySum label 14: n[multiplicity:'2'] + Bk248 + gamma total gamma multiplicity (Error # 0): summedMultiplicityMismatch

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 16449.16%

61. Multiplicity does not match sum of linked product multiplicities!
multiplicitySum label 15: n[multiplicity:'3'] + Bk247 + gamma total gamma multiplicity (Error # 0): summedMultiplicityMismatch

WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 96.55%

62. Calculated and tabulated Q values disagree.
fissionComponent label 0: /reactionSuite/fissionComponents/fissionComponent[@label='0'] (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 232951138626.8187 eV vs 2.148913e8 eV!

63. Calculated and tabulated Q values disagree.
fissionComponent label 1: /reactionSuite/fissionComponents/fissionComponent[@label='1'] (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 232951138626.8187 eV vs 2.148913e8 eV!

64. Calculated and tabulated Q values disagree.
fissionComponent label 2: /reactionSuite/fissionComponents/fissionComponent[@label='2'] (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 232951138626.8187 eV vs 2.148913e8 eV!

65. Calculated and tabulated Q values disagree.
fissionComponent label 3: /reactionSuite/fissionComponents/fissionComponent[@label='3']
(Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 232951138626.8187 eV vs 2.148913e8 eV!

66. A covariance matrix was not positive semi-definite, so it has negative eigenvalues.
Section 22 (n + Bk249 [angular distribution]): / Form 'eval': / LegendreLValue L=1 vs 1
(Error # 0): Bad evs

WARNING: 9 negative eigenvalues! Worst case = -3.489597e-04

• njoy2012 Warnings:

1. In some evaluations, the partial fission reactions MT=19, 20, 21, and 38 are given in File 3, but no corresponding distributions are given. In these cases, it is assumed that MT=18 should be used for the fission neutron distributions.
heatr...prompt kerma (0): HEATR/hinit (3)

---message from hinit---mt19 has no spectrum
mt18 spectrum will be used.

2. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (1): HEATR/hinit (4)

---message from hinit---mf6, mt 16 does not give recoil za= 97248
one-particle recoil approx. used.

3. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (2): HEATR/hinit (4)

---message from hinit---mf6, mt 17 does not give recoil za= 97247
one-particle recoil approx. used.

4. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (3): HEATR/hinit (4)

---message from hinit---mf6, mt 37 does not give recoil za= 97246
one-particle recoil approx. used.

5. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (4): HEATR/hinit (4)

---message from hinit---mf6, mt 51 does not give recoil za= 97249
one-particle recoil approx. used.

6. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (5): HEATR/hinit (4)

---message from hinit---mf6, mt 52 does not give recoil za= 97249
one-particle recoil approx. used.

7. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (6): HEATR/hinit (4)

- message from hinit---mf6, mt 53 does not give recoil za= 97249
one-particle recoil approx. used.
8. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (7): HEATR/hinit (4)
- message from hinit---mf6, mt 54 does not give recoil za= 97249
one-particle recoil approx. used.
9. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (8): HEATR/hinit (4)
- message from hinit---mf6, mt 55 does not give recoil za= 97249
one-particle recoil approx. used.
10. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (9): HEATR/hinit (4)
- message from hinit---mf6, mt 56 does not give recoil za= 97249
one-particle recoil approx. used.
11. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (10): HEATR/hinit (4)
- message from hinit---mf6, mt 57 does not give recoil za= 97249
one-particle recoil approx. used.
12. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (11): HEATR/hinit (4)
- message from hinit---mf6, mt 58 does not give recoil za= 97249
one-particle recoil approx. used.
13. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (12): HEATR/hinit (4)
- message from hinit---mf6, mt 59 does not give recoil za= 97249
one-particle recoil approx. used.
14. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (13): HEATR/hinit (4)
- message from hinit---mf6, mt 60 does not give recoil za= 97249
one-particle recoil approx. used.
15. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (14): HEATR/hinit (4)
- message from hinit---mf6, mt 91 does not give recoil za= 97249
one-particle recoil approx. used.
16. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (15): HEATR/hinit (4)
- message from hinit---mf6, mt102 does not give recoil za= 97250
photon momentum recoil used.

17. There is a problem with the fission energy release.
heatr...prompt kerma (24): HEATR/nheat (3)

```
---message from nheat---changed q from 2.148913E+08 to 2.016645E+08  
for mt 18
```

- `xsectplotter` Errors:

1. ENDF format insists that all outgoing fission neutrons, delayed or otherwise, have spectra. For delayed neutrons this is tough.
(Error # 2): No delayed n dist

WARNING: More than one delayed fission neutron decay time but no MF = 5 data